PATENT

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Colleen Severino
Signature

Applicant	:	Matthias Hoffman, et al.	Confirmation No. 2362
Application No.	:	10/567,882	
Filed	:	February 8, 2006	
Title	:	ADJUSTABLE MECHANISM FOR A MOTOR VEHICLE	
Grp./Div.	:	3656	
Examiner	:	Thomas C. Diaz	
Docket No.	:	56817/M521	

APPELLANT'S BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Post Office Box 7068
Pasadena, CA 91109-7068
April 7, 2011

Commissioner:

1. REAL PARTY IN INTEREST

U.S. Patent Application Serial No. 10/567,882 is owned by Brose Fahrzeugteile GmbH KG, Coburg.

2. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

3. STATUS OF CLAIMS

Claims 1-5, 7-12, 14-27, 29-32, 34-37 and 82-87 are presently in the application and are the subject of this appeal.

Claims 38-81 are withdrawn from consideration as directed to a non-elected invention.

Claims 6, 13, 28 and 33 were previously cancelled.

4. STATUS OF AMENDMENTS

No amendments have been entered subsequent to the Final Rejection.

5. SUMMARY OF CLAIMED SUBJECT MATTER

There is one independent claim involved in the appeal. The independent claim is copied below with annotations.

1. An adjustable mechanism for a motor vehicle for adjusting any one of an adjustable part in a motor vehicle and a seat part comprising:

a spindle nut (1) defining an axis (L) and interacting with a threaded spindle (100) and comprising in an external surface (10) an external toothing (15) through which the spindle nut engages with a further gearing element (2); (page 13, lines 27-31, page 14, lines 21-23, FIGS. 1A-1C and FIG. 2.)

wherein the external toothing (15) of the spindle nut (1) is formed through radially inwardly pointing indentations in the external surface (10) of the spindle nut (1) such that a crest of each tooth is defined by a portion of the external surface of the spindle nut and wherein tooth depth diminishes towards at least one axial end of the spindle nut; (page 14, lines 23-26, page 15, lines 12-15; Figs. 1A-1C)

wherein the spindle nut (1) has an opening with an internal surface, said internal surface comprising an internal toothing (19) through which the spindle nut (1) interacts with the threaded spindle (100); (page 15, lines 31 - page 16, line 11; Fig. 1B)

wherein the spindle nut (1) has in the axial direction on at least one side of the external toothing (15) an end section (11, 12) without external toothing, and wherein an outer diameter of the crest is less than or equal to an outer diameter of the end section; (page 14, lines 21-31; Figs. 1A-1C)

wherein the internal toothing (10) of the spindle nut (1) interacting with the threaded spindle (100) extends over a greater length in the axial direction than the external toothing (15) of the spindle nut so that the internal toothing (19) extends axially into the at least one end section (11, 12) without external toothing; (page 15, line 31 - page 16, line 1) and

wherein the external toothing (15) comprises, in the axial direction, two axial edge regions (17, 18) and a center region (16) having different toothing shapes, wherein the external toothing is globoid in shape in said axial edge regions (17, 18) with a tooth deep continuously reducing towards the axial ends of the external toothing, and wherein the center region (16) has a cylindrical portion with an involute profile in the axial direction. (page 15, lines 4-15; Figs. 1A and 1C)

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

(From the Office action of September 22, 2010)

Claims 1-5 7, 8, 12, 15-27, 29-32, 34, 36, 37, 82-87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taubmann et al. (WO9951456A1; using USP 7051986 as a translation of the PCT reference for discussing the rejection) in view of Hendrick (USP 2128483) and further in view of Campbell et al. (USP 3812737).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taubmann et al. (WO9951456A1; using USP 7051986 as a translation of the PCT reference for discussing the rejection) in view of Hendrick (USP 2128483) and further in view of Campbell et al. (USP 3812737), as applied to claim 1 above, and further in view of Hauser, Jr. (USP 4386893).

Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taubmann et al. (WO9951456A1; using USP 7051986 as a translation of the PCT reference for discussing the rejection) in view of Hendrick (USP 2128483) and further in view of Campbell et al. (USP 3812737), as applied to claim 34 above, and further in view of Muellich (USP 5893959).

Claim 28 was also rejected in the Office action of September 22, 2010. This appears to be an error because claim 28 was cancelled by applicant in an amendment filed June 9, 2009.

Applicant respectfully traverses the rejections.

7. ARGUMENT

A. Independent claim 1 and dependent claims 2-5, 7-12, 15-27, 29-32, 34-37 and 82-87 are patentable over Taubman in view of Hendrick and Campbell and further in view of Muellich.

Claim 1 of the present application recites a mechanism for adjusting a motor vehicle part, such as a seat part. The adjustable mechanism includes a spindle nut having external toothing and internal toothing. The external toothing is driven by a gearing element (e.g., a drive worm). The internal toothing drives a threaded spindle to adjust the motor vehicle part.

The primary reference cited by the Examiner, Taubmann, is also owned by applicant. Taubmann, like the present invention, describes an adjusting mechanism for a motor vehicle having a drive worm that drives a spindle nut that drives a spindle. Taubmann, however, fails to describe details of the external toothing and the internal toothing, as recited in claim 1. In particular, Taubmann fails to teach the following features of Claim 1:

> wherein the external toothing of the spindle nut is formed through radially inwardly pointing indentations in the external surface of the spindle nut such that a crest of each tooth is defined by a portion of the external surface of the spindle nut, and wherein tooth depth diminishes towards at least one axial end of the spindle nut;
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> . . .
>
> wherein the spindle nut has in the axial direction on at least one side of the external toothing an end section without external toothing, and wherein an outer diameter of the crest is less than or equal to an outer diameter of the end section.

For the above-quoted features of claim 1, the Examiner relies on the teachings of Hendrick, which describes a mechanism to operate a casement window. Applicant respectfully disagrees with the Examiner's combination of Taubmann and Hendrick and submits that one of

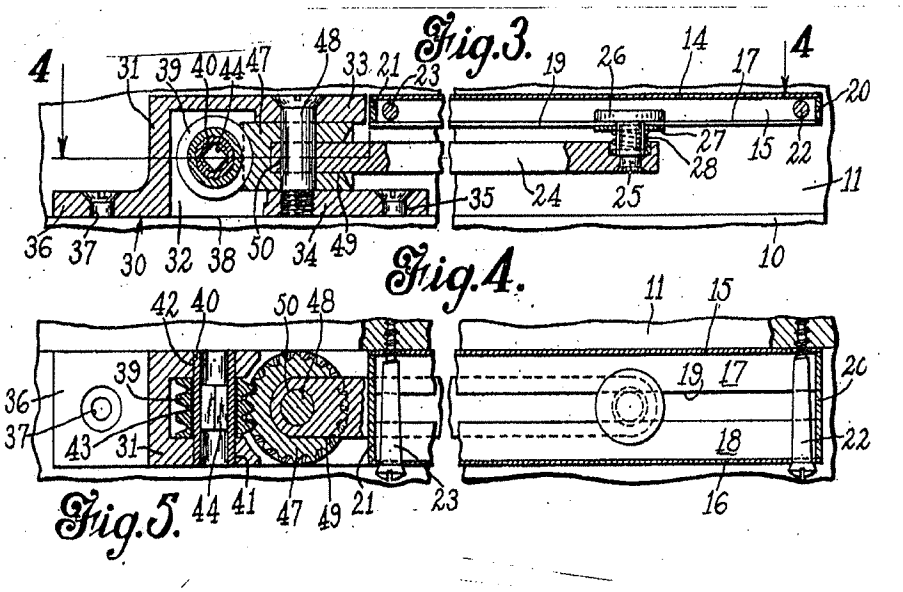
ordinary skill in the art at the time of the invention would not look to the type of teeth or the arrangement of teeth used on the worm wheel of Hendrick, which has an operating arm fixed thereon for opening a casement window, to modify the spindle nut of Taubmann, which operates a rotating spindle for moving a motor vehicle part, such as a vehicle seat.

The worm wheel arrangement in Hendrick is directed to a totally different field and to a totally different application than the spindle nut arrangement in Taubmann. Hendrick relates to an operator for opening or closing a window casement while Taubmann relates to a mechanism for moving a motor vehicle seat part. Hendrick describes a worm wheel that is fixedly connected to an operating leaver. As the worm wheel turns, it causes the operating arm to pivot, which opens or closes the casement window. In Taubmann, as the spindle nut turns, it cause a linear movement, not a pivoting movement as in Hendrick, between the spindle and the spindle nut.

A gear mechanism is a complex, highly engineered device. Worm gear mechanisms have a variety of different applications and requirements, each having different size requirements, tooth arrangements and gear geometry. Applicant respectfully submits that a person skilled in the art of motor vehicle seat mechanisms using a spindle nut/threaded spindle mechanism would not look to a totally different field (casement windows) and to a totally different application (pivoting arms) for use in the threaded spindle nut/spindle arrangement of Taubmann. Such a combination by one skilled in the art at the time of the invention is even more unlikely considering that the Hendrick device has been known for over 60 years at the time of Taubmann's filing date, yet no one apparently applied the teaching of Hendrick to a threaded spindle/spindle nut drive during that time. Applicant respectfully submits that one skilled in the art at the time of the invention using common sense would not consider Hendrick as relevant art.

Even if one skilled in the art were to consider the teachings of Hendrick to modify Taubmann, applicant submits that it would not be obvious to do so in the manner claimed in the present application. First, the worm wheel of Hendrick would not work with Taubmann because,

as seen in Figs. 3 and 4 below from Hendrick, the worm wheel 47 has an opening 49 extending radially through the worm wheel teeth to permit attachment of the operating arm 24 for opening and closing the casement window.



Such a large opening through the gear teeth is not a problem in Hendrick because the casement window opens and closed through a limited angle. Taubmann, however, requires the spindle nut to rotate continuously through several revolutions to drive the threaded spindle. Accordingly, the tooth arrangement of Hendrick could not be used on the Taubmann spindle nut and one skilled in the art seeing the interrupted tooth arrangement in Hendrick would not consider this a viable solution for Taubmann.

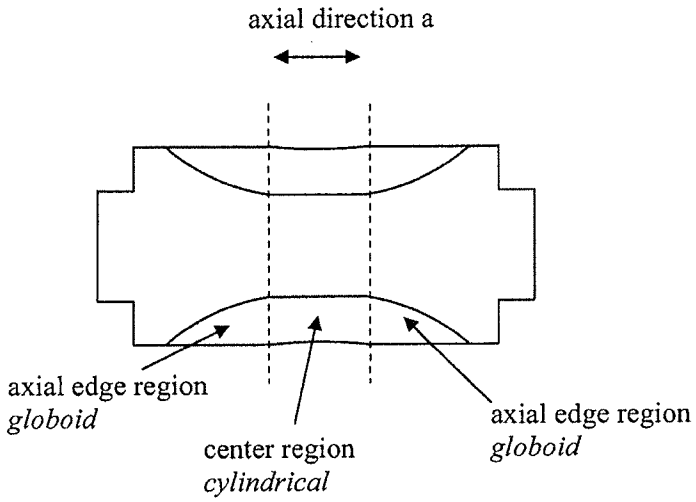
Second, Claim 1 of the present invention further recites that the internal toothing "extends over a greater length in the axial direction than the external toothing of the spindle nut so that the internal toothing extends axially into the at least one end section without external toothing." Neither Taubmann nor Hendrick teach this feature. The Examiner contends that such

a teaching is a result of the combination of Taubmann and Hendrick. Applicant respectfully disagrees.

Taubmann does not expressly identify the axial extent of the external and internal toothing of the spindle nut, but applicant has submitted and the Examiner has agreed that the toothing extends the entire axial length of the middle section 92' of the Taubmann spindle nut. This is supported by FIG. 18 of Taubmann, which shows two worms and a worm wheel, each having a toothing arrangement along the full axial length of the gear (91', 93', and 94'), used with a toothed rack. The Examiner contends, however, that one skilled in the art would use the external toothing of Hendrick having end regions without external toothing on the Taubmann spindle nut. Applicant disagrees, however, because Hendrick does not disclose any benefit to having end regions without external toothing. Applicant respectfully submits that even if one skilled in the art were to use the external toothing of Hendrick, said person would not see a benefit to changing the Taubmann feature of extending the external toothing for the entire axial length of the middle section of the spindle nut.

As noted by the U.S. Supreme Court in it's KSR International decision, "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." 127 S.Ct. 1727, 1741 (2007) The examiner has not provided a reason to change Taubmann's teaching of external toothing extending the full axial length of the spindle nut. Accordingly, the rejection of Claim 1 as unpatentable over the cited art should be reversed.

Third, Claim 1 also recites that "the external toothing comprises, in the axial direction, two axial edge regions and a center region having different toothing shapes, wherein the external toothing is globoid in shape in said axial edge regions with a tooth depth continuously reducing towards the axial ends of the external toothing, and wherein the center region has a cylindrical portion with an involute profile in the axial direction." A drawing depicting the features of this limitation is provided below:



As explained on page 4 of the application, with the cylindrical center region, on the one hand, the tolerance for the engagement of the drive worm into the external toothing of the spindle nut is widened, thereby avoiding noise generation through the engagement of the drive worm into the external toothing of the spindle nut. Through the globoid toothing in the axial edge regions of the external toothing, on the other hand, the stability of the spindle nut is improved, and the surface area of the external toothing is in those regions adapted to the drive worm to increase the supporting diameter and to achieve an improved engagement and force transmission from the drive worm to the spindle nut.

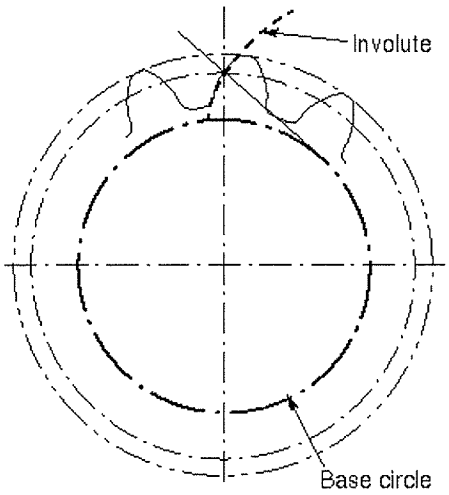
In regard to these features, the references cited by the examiner are silent.

Taubmann does not disclose, teach or suggest any specifics about the shape of the external toothing of the spindle nut. Taubmann only mentions that the spindle nut comprises external toothing, without providing any details (see for example column 4, lines 32 to 34 of Taubmann).

Hendrick also fails to disclose, teach or suggest an external toothing comprising, in the axial direction, two axial edge regions and a center region having different toothing shapes. As clearly visible in Fig. 5 of Hendrick, the external toothing of the worm wheel 47, in the axial direction, does not exhibit different regions having different toothing shapes. It rather appears (though there is no explicit teaching within Hendrick) that there is only one region with a toothing having a globoid shape. In addition, Hendrick fails to disclose that in a center region the external toothing has a cylindrical portion.

Campbell also fails to disclose, teach or suggest an external toothing comprising, in the axial direction, two axial edge regions and a center region having different toothing shapes. And Campbell fails to disclose, teach or suggest that a center region of the toothing has a cylindrical portion. Campbell discloses a worm gear having teeth 40. As clearly visible for example from Fig. 1 and Fig. 3 of Campbell, the toothing shape 40 is globoid, i.e. the shape of the teeth is adapted to the shape of the driving worm 28. Campbell does not disclose, teach or suggest a cylindrical portion in a center region of the toothing. In this regard and in contrast to the assertion of the examiner, the shaded areas 46 in Fig. 4 indicate areas of maximum wear as clearly explained between column 3, line 56 and column 4, line 5 of Campbell.

Campbell also states that teeth 40 may have an involute profile (see column 4, line 1 of Campbell et al.). However, this refers to the *cross-sectional shape of the teeth* as well-known to the person skilled in the art.



compare http://en.wikipedia.org/wiki/File:Involute_teeth.jpg

Campbell does not disclose, teach or suggest that an external toothing may have a cylindrical portion in a center region, i.e., a portion having cylindrical teeth and adjoining two axial edge regions with a globoid toothing. In contrast, the toothing of Campbell appears to be globoid in shape over the entire axial length of the toothing, as clearly visible from Fig. 1 and Fig. 3 of Campbell. Campbell does not disclose using a toothing having different toothing shapes in different axial regions.

Accordingly, for this additional reason, independent Claim 1 is believed to be patentable over Taubmann in view of Hendrick and further in view of Campbell, and the Examiner's rejection of Claim 1 should be reversed.

Claims 2-5, 7-12, 15-27, 29-32, 34-37 and 82-87 depend from Claim 1. Because these claims depend from Claim 1 and because they contain additional limitations further

distinguishing these claims from the cited prior art when considered as a whole, these claims are also believed to be patentable.

B. Claim 14 is patentable over Taubmann in view of Hendrick, Campbell and Hauser.

Claim 14 recites that the "tooth thickness of the internal toothing of the spindle nut interacting with the threaded spindle is greater than a gap between each tooth." The Examiner states that Taubmann, Hendrick and Campbell do not teach this feature, but contends that Hauser teaches this feature and that it would be obvious to one of ordinary skill in the art to change the shape of the internal toothing taught by Taubmann to be thicker than the gap between the internal toothing and the threaded spindle in order to provide the predictable results of increasing the bearing surface. Applicant respectfully disagrees.

Hauser's Abstract describes a specialized gear pump or motor having a shaftless gear with a plurality of teeth rotable on a film of fluid in close proximity to an interior surface of the housing. As taught by Hauser, such a gear tooth configuration increases the bearing surface of the shaftless gear on the film of fluid within the interior of the housing to better support the shaftless gear and thereby reduce frictional wear. These benefits of Hauser, however, are unique to the application involved, and are totally unrelated to the present application.

The claimed invention is not related to a gear pump or motor, does not involve a shaftless gear in a housing, and does not have a film of fluid in close proximity to an interior surface of the housing. One skilled in the art would not consider Hauser relevant to a spindle nut/threaded spindle arrangement. Accordingly, applicant respectfully submits that Claim 14 is patentable over the cited art and the rejection of Claim 14 should be reversed.

8. CLAIM APPENDIX

1. An adjustable mechanism for a motor vehicle for adjusting any one of an adjustable part in a motor vehicle and a seat part comprising:

a spindle nut defining an axis and interacting with a threaded spindle and comprising in an external surface an external toothing through which the spindle nut engages with a further gearing element;

wherein the external toothing of the spindle nut is formed through radially inwardly pointing indentations in the external surface of the spindle nut such that a crest of each tooth is defined by a portion of the external surface of the spindle nut, and wherein tooth depth diminishes towards at least one axial end of the spindle nut;

wherein the spindle nut has an opening with an internal surface, said internal surface comprising an internal toothing through which the spindle nut interacts with the threaded spindle;

wherein the spindle nut has in the axial direction on at least one side of the external toothing an end section without external toothing, and wherein an outer diameter of the crest is less than or equal to an outer diameter of the end section;

wherein the internal toothing of the spindle nut interacting with the threaded spindle extends over a greater length in the axial direction than the external toothing of the spindle nut so that the internal toothing extends axially into the at least one end section without external toothing; and

wherein the external toothing comprises, in the axial direction, two axial edge regions and a center region having different toothing shapes, wherein the external toothing is globoid in shape in said axial edge regions with a tooth depth continuously reducing towards the axial ends of the external toothing, and wherein the center region has a cylindrical portion with an involute profile in the axial direction.

2. The adjustable mechanism according to claim 1, wherein the tooth depth of the external toothing decreases to zero towards at least one axial end of the spindle nut.

3. The adjustable mechanism according to claim 1, wherein the external toothing of the spindle nut extends in the axial direction only over a part of the axial extension of the outer surface of the spindle nut so that the spindle nut has in the axial direction on the other side of the external toothing at least one end section without external toothing.

4. The adjustable mechanism according to claim 3, wherein the at least one axial end section of the spindle nut without external toothing is formed substantially as a circular line.

5. The adjustable mechanism according to claim 1, wherein the external toothing of the spindle nut is formed by indentations in the external surface of the spindle nut in relation to at least one end section of the spindle nut.

6. (Canceled)

7. The adjustable mechanism according to claim 3, wherein the spindle nut has an external surface in the form of a cylinder sleeve and that the external toothing is formed by indentations in the external surface whereby the diameter of the at least one end section is larger than or equal to the diameter of the external surface which is provided with indentations.

8. The adjustable mechanism according to claim 3, wherein the spindle nut in the region of the external toothing does not project in the radial direction beyond the at least one end section.

9. The adjustable mechanism according to claim 1, wherein the external toothing is globoid in shape and more particularly has globoid toothing in its axial edge regions.

10. The adjustable mechanism according to claim 1, wherein the external toothing has an involute profile in a middle section in the axial direction.

11. The adjustable mechanism according to claim 1, wherein the spindle nut is made of plastics.

12. The adjustable mechanism according to claim 1, wherein the further gearing element comprises a worm gear and wherein external toothing of the spindle nut interacts with the worm gear.

13. (Canceled)

14. The adjustable mechanism according to claim 1, wherein tooth thickness of the internal toothing of the spindle nut interacting with the threaded spindle is greater than a gap between each tooth.

15. The adjustable mechanism according to claim 1, wherein the spindle nut and the further gearing element are mounted in a gearbox housing.

16. The adjustable mechanism according to claim 15, wherein the gearbox housing is formed by housing parts.

17. The adjustable mechanism according to claim 16, wherein the housing parts are connected to one another through push-fit connections and are aligned relative to each other along all spatial directions.

18. The adjustable mechanism according to claim 16, wherein the gearbox housing comprises one or two pairs of opposing housing parts.

19. The adjustable mechanism according to claim 16, wherein the gearbox housing comprises two external housing parts which have a U-shaped cross-section.

20. The adjustable mechanism according to claim 19, wherein the external housing parts engage round bearing parts mounted opposite one another in the axial direction to support the spindle nut.

21. The adjustable mechanism according to claim 20, wherein the external housing parts surround bearing sections of the bearing parts.

22. The adjustable mechanism according to claim 15, wherein the gearbox housing is comprised of plastics.

23. The adjustable mechanism according to claim 15, wherein the gearbox housing has bearing points for one of the spindle nut and the further gearing element.

24. The adjustable mechanism according to claim 1, wherein a bearing collar for supporting the spindle nut protrudes from the axial end sections of the spindle nut.

25. The adjustable mechanism according to claim 1, wherein the end sections further define bearings for supporting the spindle nut whereby the axial and radial bearing is produced through a pair of housing parts of a gearbox housing.

26. The adjustable mechanism according to claim 15, wherein the gearbox housing has in at least one boundary wall a recess in which one of the spindle nut and further gearing element radially engages.

27. The adjustable mechanism according to claim 26, wherein the recess is defined by an opening in the corresponding boundary wall.

28. (Canceled)

29. The adjustable mechanism according to claim 26, wherein in the gearbox housing are formed two recesses set opposite one another across the axis of the spindle nut for the spindle nut.

30. The adjustable mechanism according to claim 26, wherein in a boundary wall of the gearbox housing a recess is formed for the side of the further gearing element remote from the spindle nut.

31. The adjustable mechanism according to claim 15, wherein between the gearbox housing and an associated holder of the gearbox housing there is at least one element for acoustic uncoupling.

32. The adjustable mechanism according to claim 31, wherein the at least one element is injection moulded.

33. (Canceled)

34. The adjustable mechanism according to claim 16, wherein the housing parts are connected to one another through laser welding.

35. The adjustable mechanism according to claim 34, wherein the gearbox housing has internal housing parts and external housing parts whereby the material of the external housing parts is transparent for the laser beam used for welding, and the material of the internal housing parts is designed non-transparent for the laser beam used so that a connection with the external housing parts is producible through partial melting of the internal housing parts.

36. The adjustable mechanism according to claim 20, wherein at least the spindle nut and the bearing plates of the gearbox housing are made together in one injection moulding tool.

37. The adjustable mechanism according to claim 1, wherein a gearbox housing is set in a holder of U-shaped cross-section by which it can be fixed against an associated adjustable part.

38. (Withdrawn) A method for manufacturing an adjustable mechanism with the features of claim 1, wherein the spindle nut and the gearing element are mounted in a gearbox housing comprising two external housing parts;

wherein the external housing parts engage round bearing parts mounted opposite one another in the axial direction to support the spindle nut; and

wherein the spindle nut and the bearing parts are made together in one injection moulding tool in a multi-stage injection moulding process.

39. (Withdrawn) The method according to claim 38, wherein the spindle nut and the bearing parts are made in the injection moulding tool one after the other through injection moulding whereby each of the previously made structural assembly units remains in the injection moulding tool while the next assembly unit to be made is injected.

40. (Withdrawn) The method according to claim 38, wherein further parts of the gearbox housing are made in the injection moulding tool while the previously made structural assemblies remain in the injection moulding tool.

41. (Withdrawn) The method according to claim 38, wherein external U-shaped housing parts of the gearbox housing are made in the injection moulding tool.

42. (Withdrawn) The method according to claim 38, wherein the further gear element is inserted in the injection moulding tool before the parts of the gearbox housing which are provided for supporting the further gear element are made by injection moulding.

43. (Withdrawn) The method for manufacturing an adjustable mechanism with the features of claim 34, wherein the gearbox housing comprises two external housing parts engaging round bearing parts mounted opposite one another in the axial direction to support the spindle nut, and

wherein the spindle nut and the bearing parts are made together in one injection moulding tool in a multi-stage injection moulding process, and wherein before or during the connection of the housing parts by laser welding any axial bearing play between the inner housing parts of the gearbox housing and the spindle nut is removed.

44. (Withdrawn) The method according to claim 43, wherein the axial bearing play is removed by:

a) applying a defined axial force to internal housing parts;

b) melting regions of the internal housing parts which are enclosed by areas of push-fit connection of the external housing parts; and

c) terminating the laser welding when the at least one end section of the spindle nut bears against the gearbox housing.

45. (Withdrawn) The method for mounting an adjustable mechanism mounted in a gearbox housing for a motor vehicle wherein at least one housing part is brought into engagement with a further housing assembly unit and the housing part is fixed against the further housing assembly unit in that material is melted in the engagement area of the housing part with the housing assembly, more particularly to assemble an adjustable mechanism according to claim 1, wherein the housing part and the further housing assembly are tensioned elastically against one another during the melting.

46. (Withdrawn) The method according to claim 45, wherein a tension device engages on one of the housing part and the further housing assembly unit in order to tension the housing part and the further housing assembly unit relative to one another.

47. (Withdrawn) The method according to claim 46, wherein the tension device engages on the associated element of the housing with the interposition of an elastic element.

48. (Withdrawn) The method according to claim 47, wherein a compression spring is used as the elastic element.

49. (Withdrawn) The method according to claim 45, wherein the housing part and the further housing assembly unit are brought into engagement with one another along an installation axis.

50. (Withdrawn) The method according to claim 49, wherein the engagement area is formed by a push-in area and the housing part and the further housing assembly unit are brought into engagement with one another by fitting one in the other.

51. (Withdrawn) The method according to claim 49, wherein the housing part and the further housing assembly unit are tensioned against one another along the installation axis.

52. (Withdrawn) The method according to claim 49, wherein the housing part and the further housing assembly unit are tensioned relative to one another in a direction which has a direction component transversely to the installation axis.

53. (Withdrawn) The method according to claim 52, wherein the housing part and the further housing assembly unit are tensioned relative to one another perpendicular to the installation axis.

54. (Withdrawn) The method according to claim 45, wherein the further housing assembly unit comprises a second housing part.

55. (Withdrawn) The method according to claim 54, wherein the two housing parts are fixed directly one against the other.

56. (Withdrawn) The method according to claim 45, wherein the further housing assembly unit is housed between the housing part and a second housing part whereby the two housing parts are each brought into engagement with one end side of the further housing assembly unit and are fixed against the associated end side and wherein material of one of the further housing part and of the housing assembly unit is fused in the engagement area of the relevant housing part with the associated end side of the further housing assembly unit.

57. (Withdrawn) The method according to claim 56, wherein the two housing parts are tensioned relative to each other whereby at least one of the two housing parts is also tensioned relative to the further housing assembly unit.

58. (Withdrawn) The method according to claim 46, wherein the two housing parts are tensioned against one another along the installation axis.

59. (Withdrawn) The method according to claim 46, wherein the two housing parts are tensioned against one another along the installation axis and wherein the two housing parts are tensioned relative to one another along a direction which has a direction component perpendicular to the installation axis.

60. (Withdrawn) The method according to claim 59, wherein the two housing parts are tensioned relative to each other along a direction extended perpendicular to the installation axis.

61. (Withdrawn) The method according to claim 50, wherein the further housing assembly unit is formed by two housing elements which are opposite one another perpendicular to the two housing parts.

62. (Withdrawn) The method according to claim 45, wherein a housing plate is used for the at least one housing part.

63. (Withdrawn) The method according to claim 45, wherein during melting of the material in the engagement area, the at least one housing part executes a settling movement relative to the further housing assembly unit.

64. (Withdrawn) The method according to claim 63, wherein the settling movement takes place in the direction of the elastic pretension.

65. (Withdrawn) The method according to claim 45, wherein the material is melted in the engagement area by a laser.

66. (Withdrawn) The method according to claim 65, wherein non-melting areas of the housing are made from material which is permeable to the laser beam used.

67. (Withdrawn) The method according to claim 45, wherein the duration of the melting process is controlled from a predeterminable criterion.

68. (Withdrawn) The method according to claim 63, wherein the duration of the melting process is controlled from a predeterminable criterion, and wherein the duration of the melting process is controlled in dependence on the settling movement of the at least one housing part.

69. (Withdrawn) The method according to claim 68, wherein the duration of the melting process is controlled in dependence on one of the speed and the dynamics of the settling movement.

70. (Withdrawn) The method according to claim 67, wherein the duration of the melting process is controlled in dependence on the change in the reaction force during tensioning of the at least one housing part relative to the further housing assembly unit.

71. (Withdrawn) The method according to claim 68, wherein the duration of the melting process is controlled in dependence on the extent of the settling movement.

72. (Withdrawn) The method according to claim 67, wherein the duration of the melting process is already fixed at the start of the melting process.

73. (Withdrawn) The method according to claim 45, wherein in the engagement area of the at least one housing part with the further housing assembly unit is a clearance into which flows the melted mass formed by the melting of the material.

74. (Withdrawn) The method according to claim 73, wherein the clearance is formed in the areas of push-fit connection.

75. (Withdrawn) The method according to claim 45, wherein the quality of the connection between the at least one housing part and the further housing assembly unit is monitored during the melting process from the extent of the movement of the housing part relative to the further housing assembly unit.

76. (Withdrawn) The method according to claim 63, wherein the material is melted in the engagement area by a laser, wherein the quality of the connection between the at least one housing part and the further housing assembly unit is monitored during the melting process from the extent of the movement of the housing part relative to the further housing assembly unit, and wherein the laser power is regulated in dependence on the speed of the settling movement.

77. (Withdrawn) The method according to claim 45, wherein the at least one housing part and the further housing assembly unit are made of plastics.

78. (Withdrawn) A method for manufacturing an adjustable mechanism with the features of claim 20, wherein the spindle nut and the bearing parts are made together in one injection moulding tool in a multi-stage injection moulding process.

79. (Withdrawn) A method for manufacturing an adjustable mechanism with the features of claim 22, wherein the spindle nut and the bearing parts are made together in one injection moulding tool in a multi-stage injection moulding process.

80. (Withdrawn) The method according to claim 57, wherein the two housing parts are tensioned against one another along the installation axis.

81. (Withdrawn) The method according to claim 46, wherein the two housing parts are tensioned relative to each other whereby at least one of the two housing parts is also tensioned relative to the further housing assembly unit and wherein the two housing parts are tensioned relative to one another along a direction which has a direction component perpendicular to the installation axis.

82. The adjustable mechanism according to claim 7, wherein the spindle nut has in the axial direction on either side of the external toothing an end section without external toothing, and wherein the end sections serve at the same time as bearings for supporting the spindle nut whereby the axial and radial bearing is produced through a pair of housing parts of a gearbox housing.

83. The adjustable mechanism according to claim 16, wherein the housing parts are in the form of housing plates.

84. The adjustable mechanism according to claim 23, wherein the bearing points are in the form of bearing openings.

85. The adjustable mechanism according to claim 31, wherein the at least one element is formed as a resilient member.

86. The adjustable mechanism according to claim 32, wherein the at least one element is injection moulded in one-piece on the gear housing.

87. The adjustable mechanism according to claim 1, wherein a reinforcement ring is mounted on a bearing collar of the spindle nut.

9. EVIDENCE APPENDIX

None.

10. RELATED PROCEEDING APPENDIX

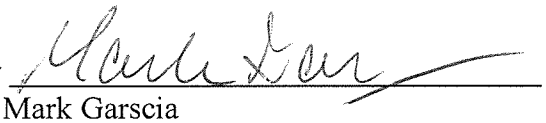
None.

11. Conclusion

The rejection of Claims 1-5, 7-12, 14-27, 29-32, 34-37 and 82-87 should be reversed.

Respectfully submitted,

CHRISTIE, PARKER & HALE, LLP

By 

Mark Garscia
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